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(54) Title: NOVEL NANOCOMPOSITES AND THEIR APPLICATION AS MONOLITH COLUMNS

(57) Abstract: Novel materials for chromatographic separations, processes for their preparation, and separation devices containing the chromatographic materials. In particular, hybrid inorganic/organic monolith materials comprising a polymerized scaffolding nanocomposite (PSN), wherein the nanocomposite contains a scaffolding functionality capable of chemically interacting with a surface of a second material are described. The hybrid inorganic/organic materials have enhanced wall adhesion and increased resistance to shrinkage as compared to prior art monolith materials. The improved adhesion of the monoliths enable the preparation of capillary columns with an internal diameter (I.D.)  $\geq 50\mu\text{m}$ .

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/13721

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C08G 77/20; B32B 9/04, 3/00  
US CL : 528/32, 39; 428/447

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 528/32, 39; 428/447

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,310,110 A (Markowitz et al)30 October 2001 (30.10.2001), see entire document	1-18, 21-23, 26, 28-36, 250 and 251

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

### \* Special categories of cited documents:

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"&" document member of the same patent family

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